

5 shooting the target with a beam of light;  
converting a beam of light returned from the target into an  
electric signal and generating a light reception signal;  
generating an inversion signal by inverting a polarity of  
the light reception signal and shifting a relative potential  
10 level of said light reception signal and said inversion signal so  
as to make said light reception signal and said inversion signal  
produce an intersection;  
comparing said light reception signal and said inversion  
signal for an electric potential; and  
15 determining a time of reception of the beam of light  
returned from said target based on an outcome of said potential  
comparison.

2. (Amended) A distance measuring apparatus for measuring  
a distance to a target by measuring a time required for a beam of  
light to go to and return from the target, said apparatus  
comprising:

5 light reception means for converting a received light into  
an electric signal;  
clamp/inversion means for clamping and inverting an output  
of said light reception means;  
comparison means for comparing the output of said light  
10 reception means and an output of said clamp/inversion means; and

means for identifying the time of light reception based on an outcome of said comparison means.

3. (Amended) A distance measuring apparatus according to claim 2, wherein said means for identifying the time of light reception detects a time from a temporal point of inversion of a magnitude relationship between the output of said light reception means and the output of said clamp/inversion means and a temporal point of another inversion of a magnitude relationship and uses a predetermined value in place of the detected time when it exceeds a limit level.

4. (Amended) A distance measuring apparatus for measuring a distance to a target by measuring a time required for a beam of light to go to and return from the target, said apparatus comprising:

a light reception element for converting a received light into an electric signal and generating a light reception signal;

a clamp/inversion circuit for inverting a polarity of said light reception signal generated by said light reception element, shifting a potential of said light reception signal high and generating an inversion signal intersecting said light reception signal at two points;

a comparator for comparing said light reception signal generated by said light reception element and said inversion signal generated by said clamp/inversion circuit; and

15 a light reception temporal point determining circuit for receiving an output of said comparator and determining a light reception temporal point between a first temporal point for inverting the magnitude relationship of the light reception signal generated by said light reception element and said inversion signal generated by said clamp/inversion circuit and a  
20 second temporal point for once again inverting the magnitude relationship thereof.

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cont.*

5 5. (Amended) A distance measuring apparatus according to claim 4, wherein said light reception temporal point determining circuit is provided with an upper limit value for a time between said first temporal point and said second temporal point and adapted to take a temporal point after a predetermined time from said first temporal point for a second temporal time when the upper limit value is exceeded.

6. (Amended) A distance measuring apparatus according to claim 5, wherein the upper limit value of said light reception temporal point determining circuit is about twice of a half of the width of the irradiated optical pulse and said circuit is adapted to take an end of a time twice as long as a half of the

5 width of the optical pulse from said first temporal point for the second temporal point.

7. (Amended) A distance measuring apparatus according to claim 4, wherein said light reception temporal point determining circuit is adapted to select a middle point of said first temporal point and said second temporal point as the light reception temporal point.

8. (Amended) A distance measuring apparatus according to claim 5, wherein said light reception temporal point determining circuit is adapted to select a middle point of said first temporal point and said second temporal point as the light reception temporal point.

Please add new claims 9 and 10 as follows:

--9. A distance measuring apparatus for measuring a distance to a target by measuring a time required for a beam of light to go to and return from the target, said apparatus comprising:

light emission means for emitting a beam of light to the target;

light reception means for receiving a reflected light from the target and converting the light into an electric output signal;

clamp/inversion means for inverting a polarity of the  
10 electric output signal from the light reception means so as to  
obtain an inverted signal and clamping a predetermined potential  
of the inverted signal so as to make the electric output signal  
from the light reception means and the inverted signal intersect  
each other at two points;

15 comparison means for comparing the electric output signal  
from the light reception means and an output signal from the  
clamp/inversion means so as to detect two intersections; and  
means for identifying a time of light reception based on  
the intersections detected by the comparison means.

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10. A distance measuring apparatus according to claim 9,  
wherein said means for identifying the time of light reception  
detects the time from the temporal point of inversion of the  
magnitude relationship between the output of said light reception  
5 means and the output of said clamp/inversion means and the  
temporal point of another inversion of the magnitude relationship  
and uses a predetermined value in place of the detected time when  
it exceeds a limit level.--

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